| IN THE UNITED STATES PATENT AND TRADEMARK OFFICE | |
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| **Declaration under 37 CFR 1.131** | Atty. Docket No.<br>**BERR1100-1** |

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| Applicants<br>**Keith L. Berrier** | |
| Application Number<br>**10/799,560** | Date Filed<br>**03/11/2004** |
| Title<br>**Systems and methods for reconstructing information using a Duncan and Horn formulation of the Kalman filter for regularization** | |
| Group Art Unit<br>**3709** | Examiner<br>**Patton, Amanda K.** |
| Confirmation Number:<br>**7773** | |

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

1. My name is Keith L. Berrier.

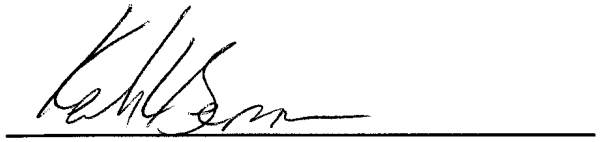
2. In 1994, I began pursuing a doctorate in Computational and Applied Mathematics at Rice University in Houston, Texas. I selected electrocardiography as my field of research and, in the process of conducting my research, I identified a need to develop improved methods for regularizing the results of inverse problems, such as the mapping of electrical activity in cardiac tissue based on non-contact potentials measured within the heart. By 1999, I had conceived of methods for regularizing inverse problems using a Duncan and Horn formulation of the Kalman filter and began working to develop these methods. I continued my research in the regularization of inverse problems using a Duncan and Horn formulation of the Kalman filter until August 2002, when I completed and defended my doctoral research to obtain a doctoral degree in the field.

3. In the process of conducting my research, I conceived and developed the subject matter of U.S. Provisional Patent Application No. 60/454,204, filed March 11, 2003, and corresponding U.S. Patent Application No. 10/799,560, filed March 11, 2004.

4. In late 2002, I submitted a paper describing my research in the regularization of inverse problems using a Duncan and Horn formulation of the Kalman filter to the academic journal IEEE Transactions on Biomedical Engineering to be considered for possible publication. This paper was submitted in confidence to the journal. I understood the standard procedures of this journal, as well as other academic and medical journals, to require that the paper be kept confidential unless and until the paper was published in the journal. The paper was reviewed by one of the journal's editors and reviewers and a revised version submitted in July 2003. The article was subsequently accepted for publicatcion. The published paper appeared in the journal in March of 2004 (Berrier KL, Sorensen DC, Khoury DS, "Solving the Inverse Problem of Electrocardiography Using a Duncan and Horn Formulation of the Kalman Filter, IEEE Trans. Biomed. Eng., 2004 March, 51(3): 507-15). Two of my doctoral committee members, Danny Sorenson and Dirar Khoury, were named as co-authors on the published paper in accordance with standard academic practice in recognition of their guidance, although they did not conceive or develop the subject matter of the paper, or write any portion of the paper.

5. In December 2002, I notified the Department of Computational and Applied Mathematics at Rice University that I would provide the department with a report on my doctoral research. The only information provided to the department at that time was a title for the report – no report was provided. The department assigned a number ("TR02-17") and date (December 2002) to the report at that time, even though they had not yet received the report. I provided the report, which is now available as "TR02-17: CAAM Department Technical Reports 2002" to the department on March 27, 2003. The report was not published by or available from the department prior to March 27, 2003.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.



Keith L. Berrier, Ph.D.

Date: 13 April 2008